Product Feature

1. Package Type：1"X 1"
2. Input voltage range：2:1
3. Operating temperature range: -40℃ - +85℃
4. Isolation voltage：1500VDC
5. Equipped with output short-circuit protection and overcurrent protection mec
6. Fields of application：Industry, power, instrumentation, communication, rail transit.

RoHS CE 3 years Warranty

Selection Guide

Part No.	Input Voltage (VDC)		Output		Full Load Efficiency%	Capacitive Load(μF) Max.
	Nominal (Range)	Max.	Voltage (VDC)	Current(mA) Max./Min.	(Typ.)	
GTA1205YMD-6WR3	12 (9-18)	20	±5	±600/0	79/81	#470
GTA1212YMD-6WR3			±12	±250/0	83/85	#100
GTA1215YMD-6WR3			±15	±200/0	81/83	#100
GTB1205YMD-6WR3			5	1200/0	79/81	1000
GTB1212YMD-6WR3			12	500/0	83/85	470
GTB1224YMD-6WR3			24	250/0	83/85	100
GTA2405YMD-6WR3	24 (18-36)	40	±5	±600/0	81/83	#470
GTA2412YMD-6WR3			±12	±250/0	85/87	#100
GTA2415YMD-6WR3			±15	±200/0	85/87	#100
GTB2403YMD-6WR3			3.3	1500/0	75/77	1800
GTB2405YMD-6WR3			5	1200/0	80/82	1000
GTB2409YMD-6WR3			9	667/0	83/85	470
GTB2412YMD-6WR3			12	500/0	83/85	470
GTB2415YMD-6WR3			15	400/0	84/86	220
GTB2424YMD-6WR3			24	250/0	83/85	100
GTB4803YMD-6WR3	48 (36-75)	80	3.3	1500/0	77/79	1800
GTB4805YMD-6WR3			5	1200/0	81/83	1000
GTB4812YMD-6WR3			12	500/0	85/87	470
GTB4815YMD-6WR3			15	400/0	86/88	220
GTB4824YMD-6WR3			24	250/0	86/88	100

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Current (full load/no-load)	12VDC nominal input series		--	603/10	633/22	mA
	24VDC nominal input series	3.3VDC Output	--	268/5	275/15	
		Other Output	--	296/5	313/15	
	48VDC nominal input series	3.3VDC Output	--	130/4	134/8	
		Other Output	--	150/4	155/8	
Reflected Ripple Current			--	20	--	mA
	12VDC nominal input series		-0.7	--	25	

Impulse Voltage	24VDC nominal input series	-0.7	--	50	VDC
	48VDC nominal input series	-0.7	--	100	
Starting Voltage	12VDC nominal input series	--	--	9	
	24VDC nominal input series	--	--	18	
	48VDC nominal input series	--	--	136	
Input undervoltage protection	12VDC nominal input series	5.5	6.5	--	
	24VDC nominal input series	12	15.5	--	
	48VDC nominal input series	26	30	--	
Input Filter		PI filter			
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Voltage Accuracy	0%- 100% load		--	±1	±3	%
Linear Regulation	Input voltage variation from low to high at full load	Vo1	--	±0.2	±0.5	
		Vo2	--	±0.5	±1	
Load Regulation	5%- 100% load	Vo1	--	±0.5	±1	
		Vo2	--	±0.5	±1.5	
Ripple & Noise	20MHz bandwidth, 5%- 100% load		--	60	85	mVp-p
Transient Recovery Time	25% load step change, nominal input voltage		--	300	500	μs
Transient Response Deviation	25% load step change, nominal input voltage		--	±3	±5	%
Temperature Coefficient	Full load		--	--	±0.03	%/℃
Over-voltage Protection	Input voltage range		110	--	160	%Vo
Over-current Protection	Input voltage range		110	140	190	%Io
Short-circuit Protection	Input voltage range		Continuous, self-recovery			

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Isolation	Input-output Electric Strength Test for 1 minute with a leakage current of 1mA max.	1500	--	--	VDC
Insulation Resistance	Input-output resistance at 500VDC	1000	--	--	MΩ
Isolation Capacitance	Input-output capacitance at 100kHz/0. 1V	--	1000	--	pF
Operating Temperature	See Fig.1	-40	--	+85	C°
Storage Temperature		-55	--	+125	C°
Storage Humidity		5	--	95	%RH
Pin Soldering Resistance Temperature	Soldering spot is 1.5mm away from case for 10 seconds	--	--	+300	℃
Switching Frequency		--	312.5	--	kHz
MTBF	MIL-HDBK-217F@25℃	1000			k hours

Mechanical Specifications

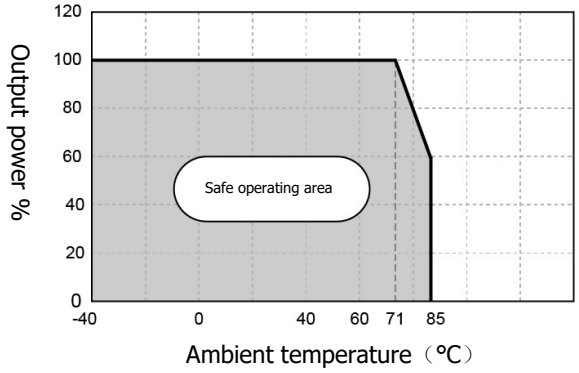
Case Material	Aluminum alloy
Package Dimensions	25.4 X 25.40 X 12.00 mm
Weight	11.60g(Typ.)
Cooling Method	Free air convection

EMC Specifications

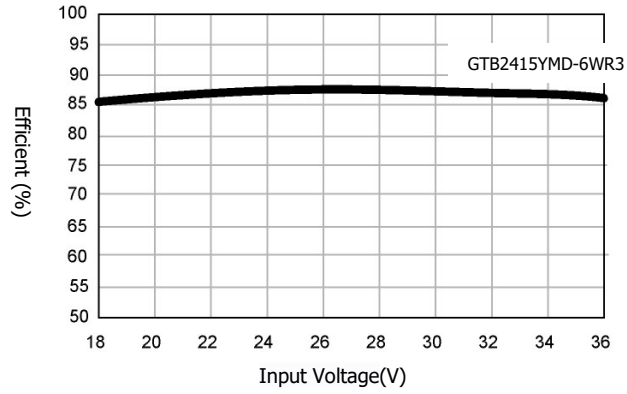
EMI	CE	CISPR32/EN55032 CLASSA(Open flame) /CLASS B (see Fig.3-② for recommended circuit)				
	RE	CISPR32/EN55032 CLASSA(Open flame) /CLASS B (see Fig.3-② for recommended circuit)				
EMS	ESD	IEC/EN61000-4-2	Contact±4KV	perf.	Criteria	B
	RS	IEC/EN61000-4-3	10V/m	perf.	Criteria	A
	EFT	IEC/EN61000-4-4	±2kV(see Fig.3-①for recommended circuit)	perf.	Criteria	B
	Surge	IEC/EN61000-4-5	line to line±2KV (see Fig.3-①for recommended circuit)	perf.	Criteria	B
	CS	IEC/EN61000-4-6	3Vr.m.s	perf.	Criteria	A

Typical Characteristic Curves

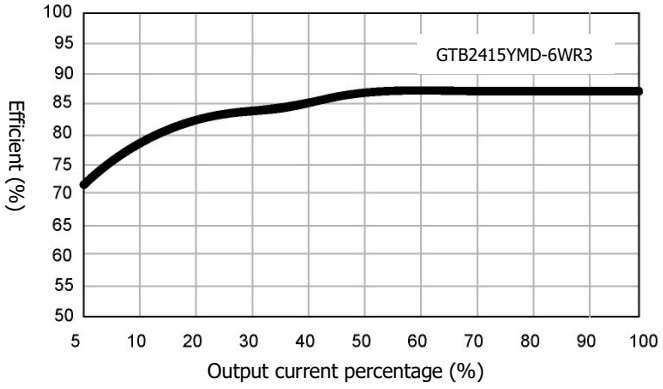
Temperature Derating Curve （Figure 1）



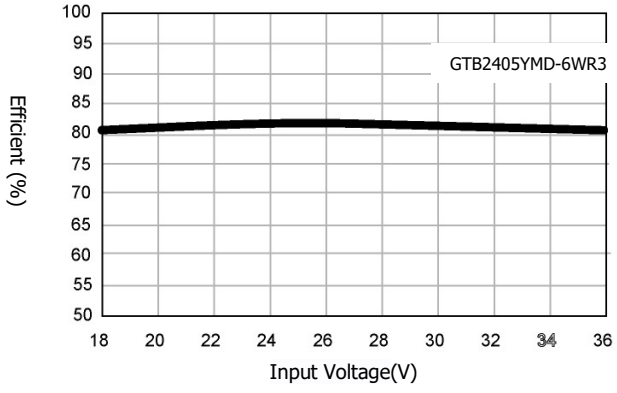
Efficiency Vs Input Voltage (Full Load)



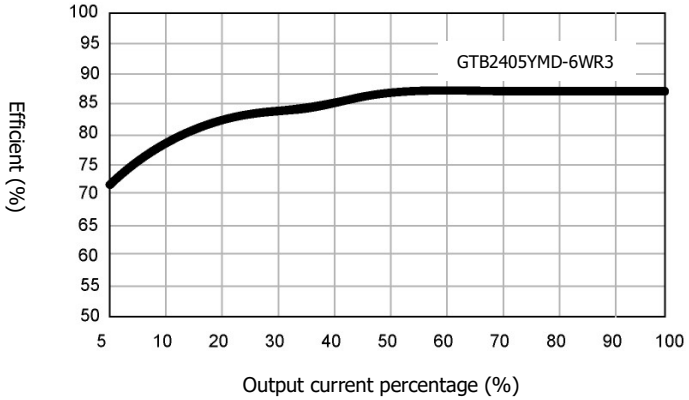
Efficiency Vs Output Voltage (Vin=24V)



Efficiency Vs Input Voltage (Full Load)

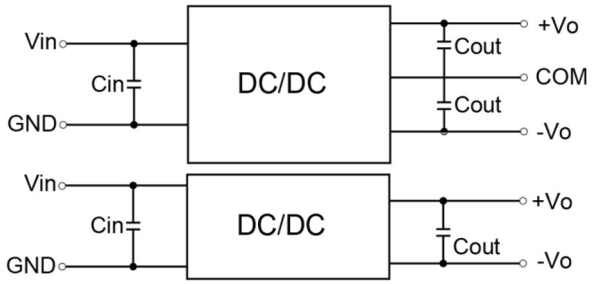


Efficiency Vs Output Voltage (Vin=24V)



Typical Circuit Design And Application

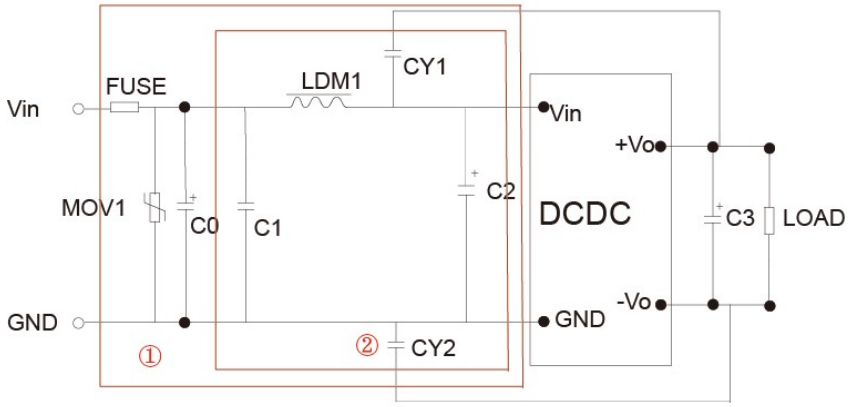
Figure 2



Recommended component parameters

Vin	12V	24V	48V
Cin	100uF	10-47uF	100uF
Cout	10uF		

EMC compliance circuit Figure 3



EMI Recommended component parameters

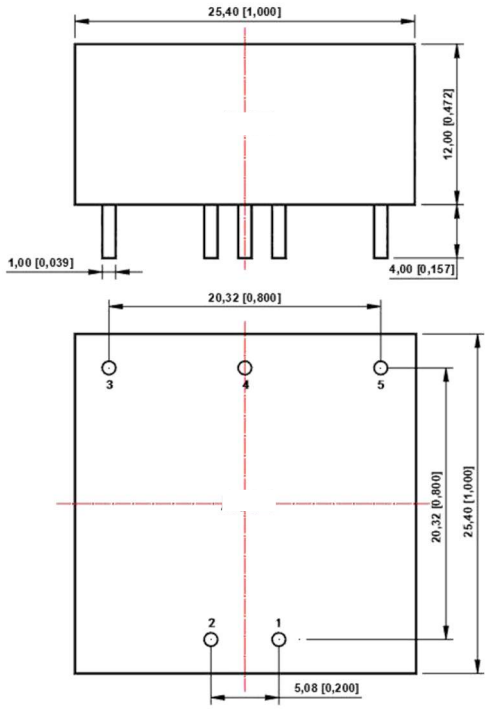
Vin	12V	24V	48V
FUSE	Choose according to actual input current		
MOV	14D330K	20D470K	14D101K
C0	1000uF/50V	1000uF/50V	680uF/100V
C1	1uF/50V	1uF/50V	4.7uF/100V
C2	330uF/50V	330uF/50V	330uF/100V
C3	Refer to the Cout in Fig.2		
LCM	4.7uH		
CY1、CY2	1nF/2KV		

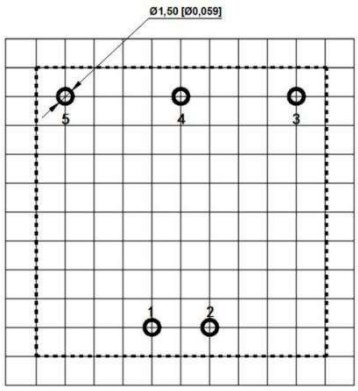
Note：

1. All DC-DC converters of this series are tested before delivery using the recommended circuit shown in Fig.2.
2. Input and/or output ripple can be further reduced by appropriately increasing the input & output capacitor values Cin and Cout and/or by selecting capacitors with a low ESR (equivalent series resistance). Also make sure that the capacitance is not exceeding the specified max. capacitive load value of the product.
3. The products do not support parallel connection of their output.

Dimensions and Recommended Layout

Dimensions	PCB Printing Layout





The grid distance is 2.54 x 2.54mm

Note:

Unit: mm[inch]

Pin section tolerances:±0.10[±0.004]

General tolerances:±0.50[±0.020]

Pin Definition Table

Pin	Single	Dual
1	GND	GND
2	Vin	Vin
3	+Vo	+Vo
4	No Pin	COM
5	-Vo	-Vo

Note:

1. The input voltage should not exceed the specified range value, otherwise it may cause permanent and irreparable damage;
2. It is recommended to use at a load of over 5%. If the load is below 5%, the ripple index of the product may exceed the specifications, but it does not affect the reliability of the product;
3. Suggested dual output module load imbalance: ≤ ± 5%. If it exceeds ± 5%, it cannot be guaranteed that the product performance meets all performance indicators in this manual;
4. The maximum capacitive load is tested within the input voltage range and under full load conditions;
5. Unless otherwise specified, all indicators in this manual are measured at Ta=25 ℃, humidity<75% RH, nominal input voltage, and output rated load;
6. All indicator testing methods in this manual are based on our company's corporate standards;
7. Our company can provide product customization, and specific requirements can be directly contacted by our technical personnel;
8. Product specifications are subject to change without prior notice.